



## Neighborhood analysis: a case study on curriculum-based course timetabling

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Résumé en anglais	<p>In this paper, we present an in-depth analysis of neighborhood relations for local search algorithms. Using a curriculum-based course timetabling problem as a case study, we investigate the search capability of four neighborhoods based on three evaluation criteria: percentage of improving neighbors, improvement strength and search steps. This analysis shows clear correlations of the search performance of a neighborhood with these criteria and provides useful insights on the very nature of the neighborhood. This study helps understand why a neighborhood performs better than another one and why and how some neighborhoods can be favorably combined to increase their search power. This study reduces the existing gap between reporting experimental assessments of local search-based algorithms and understanding their behaviors.</p>
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